WATER QUALITY IN THE LOWER RIO GRANDE

ANNUAL WATER QUALITY UPDATE AND BASIN ADVISORY MEETING

LESLIE GRIJALVA, USIBWC TEXAS CLEAN RIVERS PROGRAM

JULY 28, 2021
**WHAT IS THE IBWC TEXAS CLEAN RIVERS PROGRAM?**

- State fee-funded program created in 1991
- IBWC integrated water quality monitoring program with TCEQ in 1998
- USIBWC collects ambient water quality for entire reach of the international portion of the Rio Grande
  - Samples are collected monthly or quarterly by IBWC, TCEQ Regional Offices, and volunteer groups such as local universities and municipalities
  - Sample and analysis was standardized to ensure data quality

Monitoring sites on the Rio Grande
- USIBWC CRP – 55 SITES
- TCEQ – 37 sites
  - 12 DUPLICATE
- Total 92 stations

**Provide data so that corrective actions can be prioritized and implemented**
WHAT DOES CRP DO?

- Water Quality Monitoring
  - Routine Monitoring
  - Special Studies
- Water Quality Assessment and Reports
  - Annual Basin Highlights Report
  - Basin Summary Report (5-year report)
  - Watershed Characterizations
    - Lower 2016
    - 2022 will be on the Lower again
LOCAL PARTNERSHIPS- LOWER RIO GRANDE

Help monitor, collect and analyze water samples:
- USIBWC Mercedes field office
- USIBWC Falcon Dam field office
  - UTRGV- EDINBURG
  - Brownsville PUB
  - USGS
  - TCEQ Harlingen
- TCEQ Continuous WQ Monitoring
WHAT DATA DOES CRP COLLECT?

- ROUTINE PARAMETERS
  - FIELD DATA (PH, DO, EC, TEMP)
  - CONVENTIONALS
    (NUTRIENTS, SALTS, BOD, TDS)
  - BACTERIA

- NON-ROUTE INE
  - ORGANICS IN SEDIMENT
  - METALS IN WATER AND SEDIMENT
WHAT HAPPENS TO THE DATA?

CRP and TCEQ regional offices collect and review data

Submit Data to TCEQ

TCEQ compares data to Standards

Segments not meeting standards are listed as impaired on the 303d List
### Texas Surface Water Quality Standards

**For the Lower Rio Grande**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Uses</th>
<th>TDS (mg/l)</th>
<th>Bacteria (#/100 ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2301 – Rio Grande Tidal</td>
<td>• Primary Contact Recreation • Excellent Aquatic Life</td>
<td>--</td>
<td>35 Entero</td>
</tr>
<tr>
<td>2302 – Rio Grande Below Falcon Reservoir</td>
<td>• Primary Contact Recreation • High Aquatic Life • Sole-source public drinking supply</td>
<td>880</td>
<td>126 E. Coli</td>
</tr>
<tr>
<td>2303 – International Falcon Reservoir</td>
<td>• Primary Contact Recreation • High Aquatic Life • Sole-source public drinking supply</td>
<td>1,000</td>
<td>126 E. Coli</td>
</tr>
</tbody>
</table>
INTEGRATED REPORT AND 303D LIST

IMPAIRED

IMPAIRMENTS ➔ DOES NOT MEET WATER QUALITY STANDARDS

CONCERNS ➔ CLOSE TO NOT MEETING WATER QUALITY STANDARDS,

OR

HAVE HIGH VALUES OF PARAMETERS FOR WHICH THERE ARE NO STANDARDS
### TABLE OF WATER QUALITY IMPAIRMENTS AND CONCERNS FROM THE 2020 305(B) TEXAS WATER QUALITY INVENTORY AND 303(D) LIST OF IMPAIRED WATERBODIES*

<table>
<thead>
<tr>
<th>Segment Number</th>
<th>Area</th>
<th>Parameter of Impairment</th>
<th>Parameter of Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>2301</td>
<td>Rio Grande Tidal</td>
<td></td>
<td>Bacteria, Chlorophyll-a, Nitrate, DO¹</td>
</tr>
<tr>
<td>2302</td>
<td>Rio Grande Below Falcon Reservoir</td>
<td></td>
<td>Ammonia, Chlorophyll-a, DO¹</td>
</tr>
<tr>
<td>2302A</td>
<td>Arroyo Los Olmos</td>
<td>Bacteria</td>
<td>Chlorophyll-a, DO¹</td>
</tr>
<tr>
<td>2303</td>
<td>International Falcon Reservoir</td>
<td></td>
<td>Fish Kills, Toxicity in Water</td>
</tr>
</tbody>
</table>

*Information obtained from the 2020 Texas Integrated Report

¹Dissolved Oxygen. If DO is listed as a concern, then the mean concentration exceeded the screening level for a grab sample.
UPSTREAM OF RIO GRANDE CITY

Rio Grande River at Fort Ringgold, near Rio Grande City: Station 13185

Rio Grand at Fort Ringgold, near Rio Grande City: Station 13185
Rio Grande River near Los Ebanos: Station 13184

**TDS (mg/L)**

- Red line: TDS (mg/L)
- Blue line: Flow (ft³/sec)
- Black line: Linear TDS (mg/L)

**E. Coli (MPN/100mL)**

- Green line: E. Coli (MPN/100mL)
- Blue line: Flow (ft³/sec)
- Black line: Linear E. Coli (MPN/100mL)
UPSTREAM OF McALLEN

Rio Grande Downstream of Anzalduas Dam: Station 13664

- TDS (mg/L)
- Flow (ft3/sec)
- Linear TDS (mg/L)

Rio Grande Downstream of Anzalduas Dam: Station 13664

- E.Coli (MPN/100mL)
- Flow (ft3/sec)
- Linear E.Coli (MPN/100mL)
DOWNSTREAM OF MCALLEN

Rio Grande Upstream of Pharr International Bridge: Station 15808

- TDS (mg/L)
- Flow (ft³/sec)
- Linear (TDS (mg/L))

Rio Grande Upstream of Pharr International Bridge: Station 15808

- E. Coli (MPN/100mL)
- Flow (ft³/sec)
- Linear (E. Coli (MPN/100mL))
DOWNSTREAM OF BROWNSVILLE

Rio Grande at El Jardin Pump: Station 13177

- TDS (mg/L)
- Flow (ft³/sec)
- Linear (TDS (mg/L))

Rio Grande at El Jardin Pump: Station 13177

- E. Coli (MPN/100mL)
- Flow (ft³/sec)
- Linear (E.Coli (MPN/100mL))
Bacteria counts are increasing around McAllen and downstream of Brownsville.

- May be non-point source rather than a point source.
- Rainfall, storm water runoff, and agricultural return flows may all be contributing factors.
- Urban areas have grown and increasing population may also be contributing to the issue.

TDS levels tend to rise when flows are low and decrease when flows are high.

- Data indicates a decrease overall

Currently, in CRP’s monitoring framework, the salinity values are something we are monitoring closely

- No current impairment or concern exists for salinity in this reach under the 303d list.
- Average is still under the water quality standard of 880 mg/L.

The program continues to monitor at the stations on a routine basis and provides the data to the TCEQ.
OTHER CRP ACTIVITIES

• PUBLIC PARTICIPATION, OUTREACH, AND ENVIRONMENTAL EDUCATION

• UPDATE: VOLUNTEER MONITORING, FRIENDS OF THE RIO GRANDE
CRP WEBSITE

https://www.ibwc.gov/CRP/Index.htm

- Data
- Maps
- Calendar
- Publications
- Projects & studies
- RG info
- Photos & videos
- Links, etc
- Outreach
Thank you!

CRP Website:
https://www.ibwc.gov/CRP/Index.htm

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